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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,110	08/29/2003	Constantin Bucur	O2MICRO 03.18	9841
32047 7590 09/04/2007 GROSSMAN, TUCKER, PERREAULT & PFLEGER, PLLC 55 SOUTH COMMERICAL STREET MANCHESTER, NH 03101			EXAMINER BERHANU, SAMUEL	
			ART UNIT 2838	PAPER NUMBER
			MAIL DATE 09/04/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

TH

Office Action Summary

Application No.

10/652,110

Applicant(s)

BUCUR ET AL.

Examiner

Samuel Berhanu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 7-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 7-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

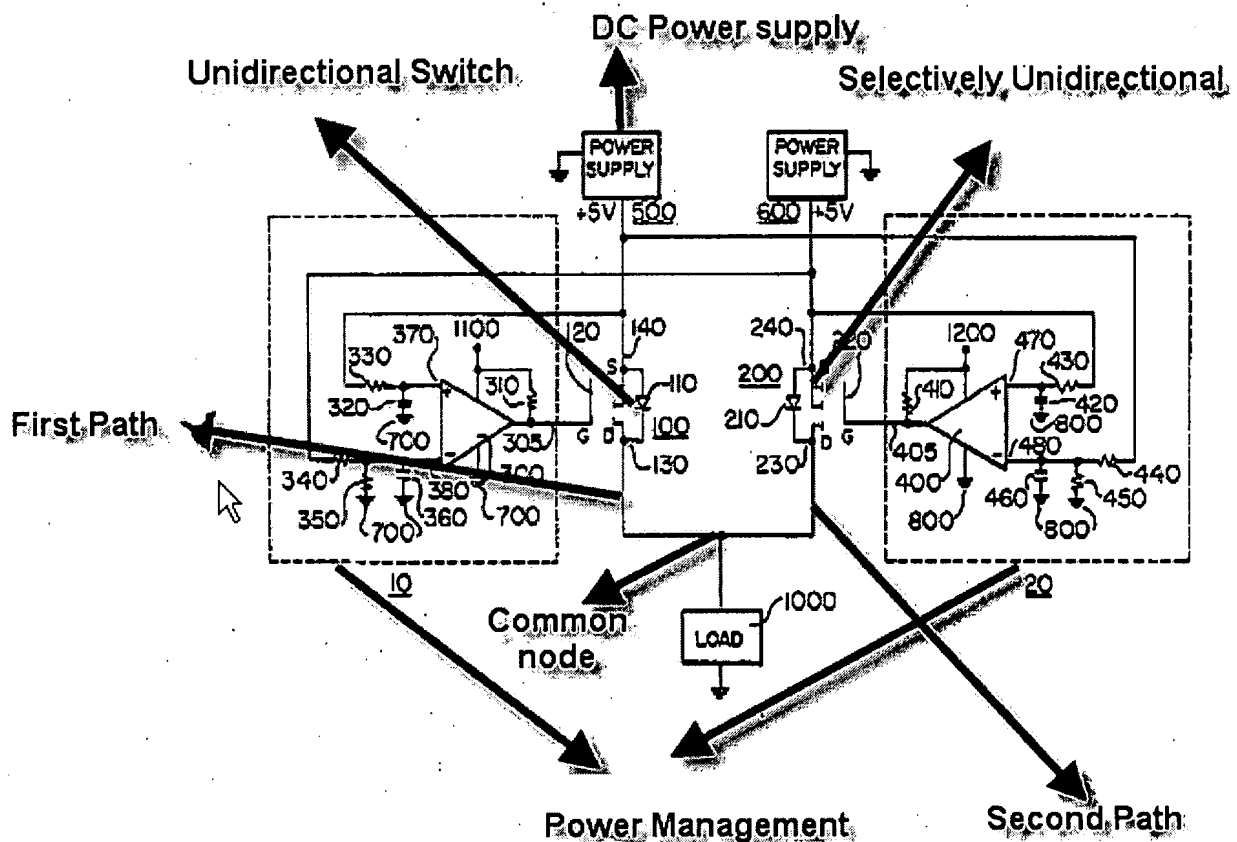
Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cowan et. al. (US 4,812,672) in view of Kelly (US 6,300,764).

Regarding Claim 1, Cowan et. al. discloses in Figures 1-3, a power supply topology comprising:



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A first path (see figure above) configured to be coupled to a controllable DC power source (C1); a second path (see figure above) configured to be coupled to a rechargeable battery (B1); a third path (see figured above) configured to be coupled to a system load (see figure 4), wherein said first, second, and third paths are coupled to a common node; a unidirectional switch (140) coupled to said first path to allow selective coupling of said controllable DC power source to said system load via said common node; and a selectively unidirectional switch (240) coupled to said second path to allow selective coupling of said battery to said common node; a power management control circuit (10 and 20)n configured to control the conduction state of said unidirectional switch (see figure above, 110) to a closed position to enable said controllable DC power source to supply power to said system load via said common node (see figure above) , said power management control circuit is further configured to control the conduction state of said selectively unidirectional switch (see figure above, element 220) to a first closed position to enable said rechargeable battery to supply power to said system load via said common node and to prevent a current flow from said controllable DC power source to said rechargeable battery (noted that the diodes that are presented with the switches are served to protect any reverse currents going into the power supplies) ; wherein when said unidirectional switch is in said closed position and said selectively unidirectional switch is in said first closed position, said controllable DC power source and said rechargeable battery are coupled in parallel (See column 1, lines 50-54, Claims 6 and 11)

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¹ The present invention replaces the relay with a circuit employing a MOSFET. Such a component will retain the required low contact resistance, while providing fast switching capabilities. The present invention supplies power to the load by, normally, having both power supplies connected in parallel to the load, a faulty or under voltage power supply (i.e. a cause of loss of power) being disconnected by the above circuit.

Claims Text - CLTX (30):

6. A solid state circuit for selectively connecting first and second power supplies connected, in parallel, to an electrical load, or disconnecting said first or second power supplies from said electrical load, whereby said first and second power supplies can be simultaneously connected to said load, said solid state circuit comprising:

Claims Text - CLTX (51):

11. A solid state circuit for connecting or disconnecting one of two power supplies (500,600), connected to an electrical load (1000) in parallel, comprising:

Cowan et. al. do not disclose explicitly, control circuit configured to monitor the voltage of said battery and control the output voltage of said controllable DC power source to be within a selected tolerance range of said voltage of said battery.

Kelly discloses in Figures 1-7, discloses control circuit configured to monitor the voltage of said battery and control the output voltage of said controllable DC power source to be within a selected tolerance range of said voltage of said battery (see Column 8, lines 4-9)

¹ For switch 126, interlock 430 requires that the power monitor circuit 334 ensure that all operating voltages are within proper tolerance ranges, that only one squib is selected, and that a software command has been properly issued from microprocessor 116.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to add a voltage control means in e Cowan et. al. power supply in order to control all the power supplies operating ranges as taught by Kelly to protect unwanted power switch.

3. Claims 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cowan et. al. (US 4,812,672) in view of Kelly (US 6,300,764) , and Further in view of Furukawa et. al. (US 6, 225, 708)

Regarding Claim 7, Cowan et. al. does not disclose explicitly, wherein said controllable DC Power source comprises a DC to DC converter. Furukawa et. al. discloses controllable DC Power source (30) comprises a DC to DC converter (46 and 44). It would have been obvious to a person having ordinary skill in the art at the time of the invention to replace Cowan et. al. DC power supply with an AC/DC power supply that includes a DC Converter as taught by Furukawa et. al. in order to operate the load within its allowable voltage variation and to feed a regulated voltage to the load without an intervening DC/DC converter.

Regarding Claim 8, Furukawa et. al. discloses a fixed DC power source (50) coupled to said DC to DC converter (44) via said first path, wherein a first power conversion is made by said fixed DC power source by accepting an input voltage and converting said input voltage to a fixed DC output voltage and a second power conversion is made by said DC to DC converter by accepting said fixed DC output voltage and converting said fixed DC output voltage to a DC output voltage.

Regarding Claim 9, Furukawa et. al. discloses in figure 4, wherein said unidirectional switch is coupled between said fixed DC power source and said DC to DC converter.

Regarding Claim 10, Furukawa et. al. discloses in figure 4, wherein said unidirectional switch is coupled between said DC to DC-to-DCrter and said common

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node.

Regarding Claim 11, Furukawa et. al. discloses in figures 1- 4, wherein said controllable DC power source comprises a controllable adapter (32).

Regarding Claim 12, Furukawa et. al. discloses in figures 1- 4, wherein a first power conversion is made by said controllable adapter by accepting an input voltage and converting said input voltage to an output DC voltage to supply to said system load.

Regarding Claim 13, Furukawa et. al. discloses in figures 1- 4 wherein said controllable adapter comprises an AC/DC adapter.

Response to Arguments

4. Applicant's arguments with respect to claims 1 and 7-13 have been considered but are moot in view of the new ground(s) of rejection, or not persuasive.

Applicant argues that Cowen does not disclose or suggest a battery and a controllable DC power supply in parallel to supply power to a load. This is incorrect. Cowen discloses in Col.1, lines 50-54, Claims 6 and 11 that the two power supplies providing power to the load in parallel.

⁴ The present invention replaces the relay with a circuit employing a MOSFET. Such a component will retain the required low contact resistance, while providing fast switching capabilities. The present invention supplies power to the load by, normally, having both power supplies connected in **parallel** to the load, a faulty or under voltage power supply (i.e. a cause of loss of power) being disconnected by the above circuit.

Claims Text - CLTX (30):

6. A solid state circuit for selectively connecting first and second power supplies connected, in **parallel**, to an electrical load, or disconnecting said first or second power supplies from said electrical load, whereby said first and second power supplies can be simultaneously connected to said load, said solid state circuit comprising:

Claims Text - CLTX (51):

11. A solid state circuit for connecting or disconnecting one of two power supplies (500,600), connected to an electrical load (1000) in **parallel**, comprising:

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Berhanu whose telephone number is 571-272-8430. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SB



KARL EASTHOM
SUPERVISORY PATENT EXAMINER